The Importance of a Federal Nuclear Energy R&D Program

Nuclear Energy Research Initiative Workshop
April 23, 1998

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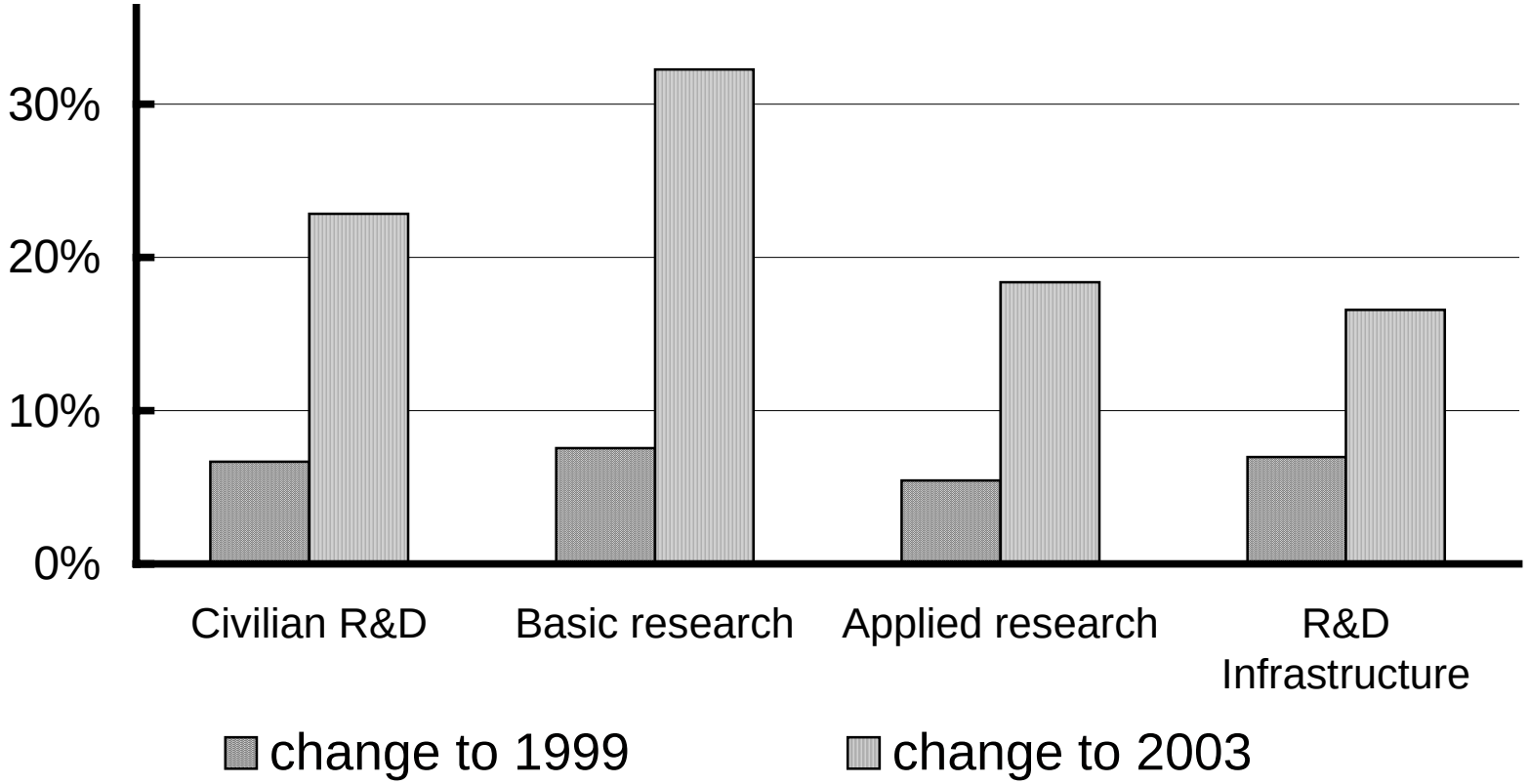
Towards the 21st Century

- **Balanced budget agreement**
- **Children's health and development**
- **Quality education for all**
- **Science and technology**
- **Infrastructure**
- **Climate change and energy**

President Clinton's Increased Investments in Research, *percentage*



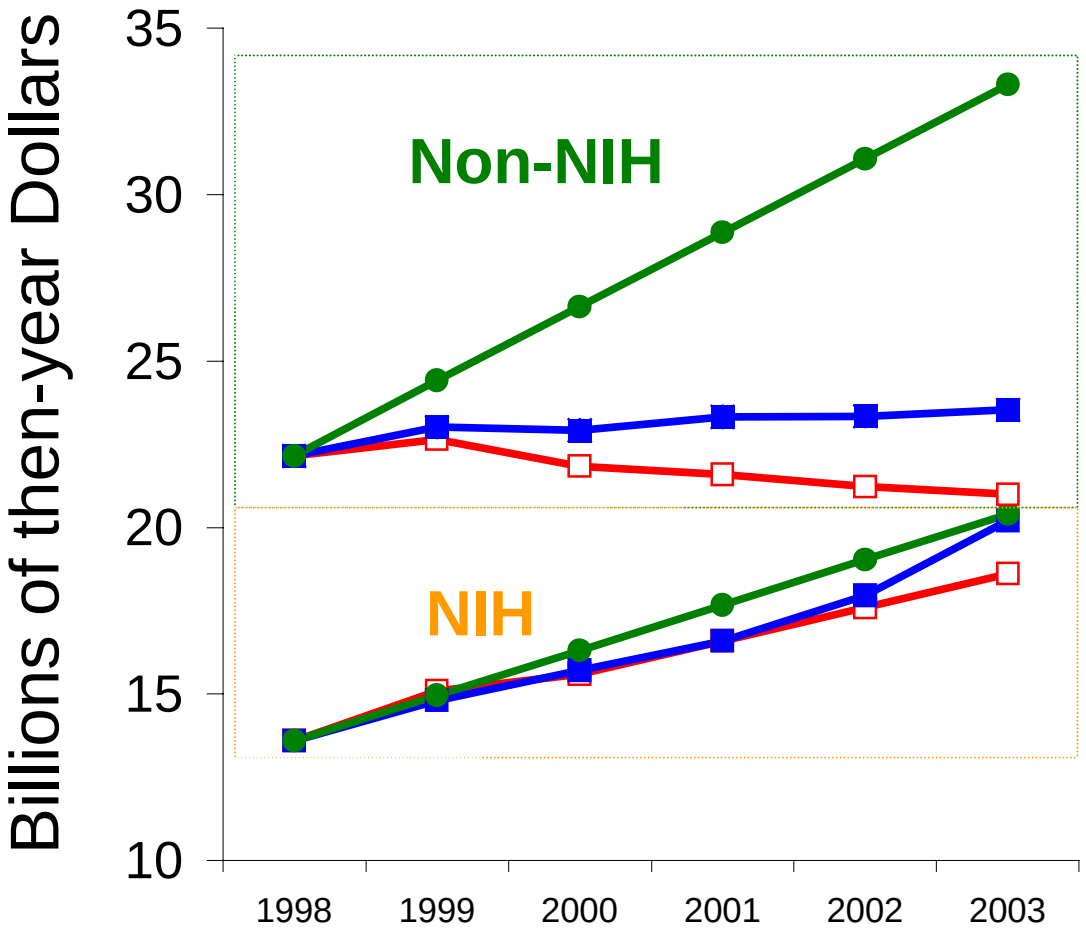
Themes from the President and Vice President

- **Technology and its science base are responsible for more than 50 percent of American productivity increases over the past 50 years**
- **Scientific fields are thoroughly interconnected and interdependent**
- **World-class education and life-long learning are essential to America's continuing competitiveness and leadership**

FY 1999 Budget Invests Boldly in S&T

- Broad Federal R&D **portfolio**
- **Merit-based** allocation of resources
- Expectation for **high return** over time
  - **Discoveries** of new knowledge
  - **Innovations** catalyzing new jobs & industries
  - **Workforce** capability
  - **Solutions** to health, environmental, educational and national-security challenges

Civilian R&D



S. 1305

President's FY 99 Budget

Senate Budget Resolution

MAF 4/8/98

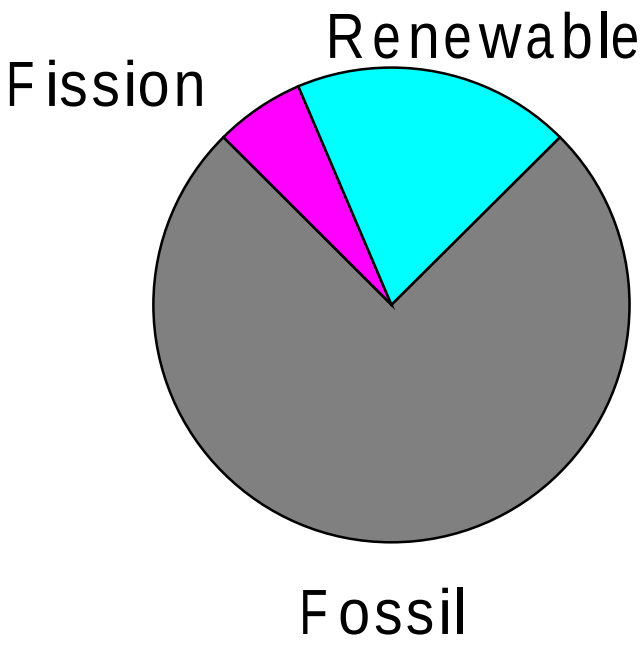
Source: House Science Minority Staff
(based on Congressional Research Service numbers)

Energy Considerations

- **Energy critical to economic development & social well-being**
- **Energy production key factor in environmental degradation and global climate change**

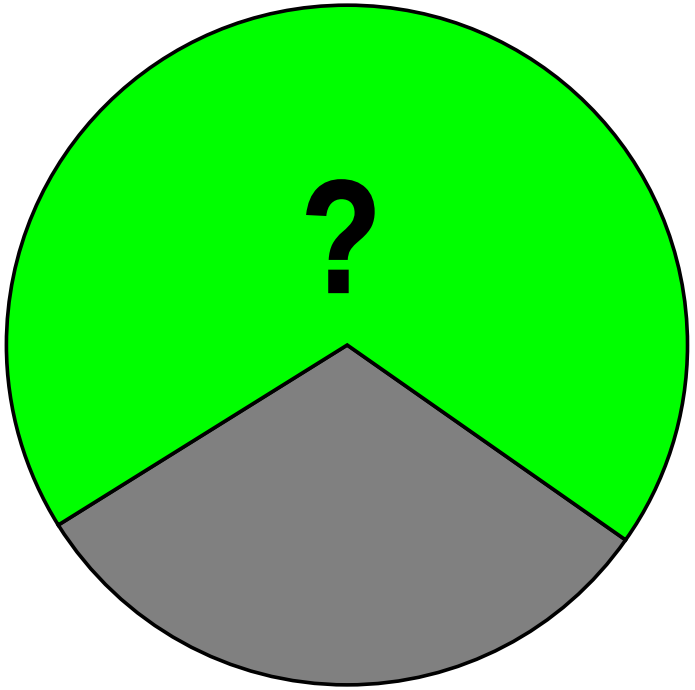
Global Primary Energy Supply

1995



~420 Quads

~2050



~1000 Quads

President Clinton's Request of PCAST

"…to review the current national energy R&D portfolio, and make recommendations to me by October 1, 1997 on how to ensure that the United States has a program that addresses its energy and environmental needs for the next century. The analysis should be done in a global context, and the review should address both near- and long-term national needs including renewable and advanced fission and fusion energy supply options, and energy end-use efficiency."

--*January 14, 1997*

Issues Compromising Fission's Potential

- **Disposal of spent fuel**
- **Concerns about nuclear proliferation**
- **Concerns about plant safety**
- **Non-competitive economics of current plants**

"DOE should establish a new program…which would competitively select among proposals ... to address key issues affecting the future of fission energy" (PCAST)

PCAST Advice Shaped FY 1999 Nuclear Energy R&D Budget

- **NERI:** Encourage innovation by soliciting investigator-initiated ideas to address the issues confronting nuclear energy
- **University Program:** Support nuclear engineering education and attract students
- **NEPO:** Partner with industry to address problems that may prevent continued operation of current plants

NERI: A Promising New Approach

- Seek **innovation**
- Broaden the R&D community to involve **newcomers** with relevant expertise
- Attract **students**
- Listen to and learn from the **critics**
- Communicate effectively with the **public**

➨ ***Work together to secure funding, shape and nurture the program, and ensure an auspicious start***